Whose Mind is it Anyway? The relationship between internalized implicit gender bias, implicit self-esteem, and mental health of women

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Abstract

Can societal negative stereotypes and biases toward women be internalized by women and measured using the Implicit Association Test (IAT)? Do these implicit stereotypes impact a woman's implicit self-esteem without her being cognizant of it?

Recent research shows a correlation between low implicit self-esteem and poor mental health. The current study aims to examine the relationship between implicit self-esteem, internalized negative stereotypes, and mental health.

The IAT is used to measure implicit self-esteem and implicit gender bias. The Mental Health Inventory-21 is used to measure mental health and the Self-Attributes Questionnaire is another measure of self-esteem.

It was hypothesized that a correlation will be found between high gender bias, low self-esteem, and poor mental health.

Introduction

- Implicit stereotypes are mental associations between a trait and a social group or category (Greenwald & Krieger, 2006).
- Implicit biases are discriminatory biases based on implicit stereotypes (Greenwald & Krieger, 2006).
- Implicit self-esteem is an unconscious and relatively uncontrolled self-evaluation (DeHart, Pelham, & Tennen, 2006).
- System Justification is where people internalize and perpetuate systemic forms of inequality (Jost, Pelham, & Carvallo, 2002).
- Ingroup bias is defined as favoring one's own group. Outgroup bias is defined as favoring a group in higher status than one's own (Jost, Pelham, & Carvallo, 2002).

Methods and Materials

- Demographics survey
- Self-Attributes Questionnaire (SAQ)(Pelham & Swann, 1989)
- Mental Health Inventory (MHI-21)(Hennessy, Patrick, & Swinbourne, 2018)
- Gender Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998; Richeson & Ambady, 2001)
- Demographic information gathered was used to develop a personalized self-esteem IAT (Greenwald & Farnham, 2000)

Figure 1. Example of Gender Affective IAT slides.

Participant must sort each word in the center of the screen either to the left or right. The first slide is gender (male or female), the second slide is affect (positive or negative), and the third is a combination of the two.

Figure 2. Example of Self-Esteem Evaluative IAT slides.

Participant must sort each word in the center of the screen either to the left or right. The first slide is identity (self or other), the second slide is evaluative (positive or negative), and the third is a combination of the two.

Results

Implicit Association Test (IAT) D-score Means and One-Sample T-test

Variable	*M*	*SD*	*t*
Gender Affective IAT	-0.53	0.39	-6.13***
Gender Competence IAT	0.29	0.42	3.76***
Self-Esteem Affective IAT	0.65	0.43	4.58**
Self-Esteem Evaluative IAT	0.66	0.42	4.70**

Note: A positive D-score indicates bias toward Target A, and a negative D-score indicates a bias toward Target B.

***p>.001
**p=.002

Table 1. IAT Results Table.

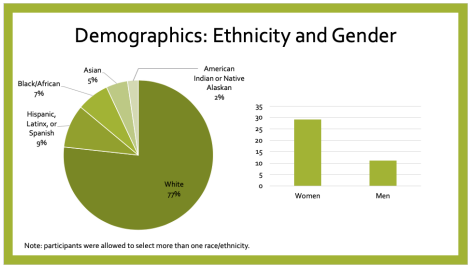
Independent Samples T-test by Gender

Variable	Women			Men			
	M	*SD*	*n*	*M*	*SD*	*n*	*t*
SAQ	346.23	35.10	22	363.71	44.41	7	-1.08
Attitudes	51.42	9.83	26	53.80	9.14	10	-0.66
Certainty	63.73	14.98	26	68.50	10.90	10	-0.91
Importance	63.69	11.62	26	66.90	12.47	10	-0.73
Ideal Self	64.13	19.21	24	67.00	18.96	11	-0.41
Perception of Authority	56.19	9.21	26	56.09	14.33	11	0.03
Desired Feedback	49.38	17.49	24	43.00	17.87	10	0.96
MHI-21	66.12	18.28	26	66.09	28.62	11	0.003
Psychological Distress	29.15	10.52	26	31.00	13.54	11	-0.45
Emotional Well-Being	28.08	8.70	26	25.27	9.84	11	0.86
Hopelessness	8.88	3.69	26	9.82	6.87	11	-0.43
Gender Affective IAT	-0.66	0.30	16	-0.09	0.35	5	-3.59***
Gender Competence IAT	0.36	0.36	20	0.13	0.51	9	1.39
Self-Esteem Affective IAT	0.68	0.49	7	0.56	0.12	2	0.33
Self-Esteem Evaluative IAT	0.76	0.21	7	0.33	0.94	2	0.64

***p=.002

Table 2. Table of scores by gender.

Figure 3. Demographics of sample.



Correlations between Self-Attributes Questionnaire (SAQ), Mental Health Inventory (MHI-21), Gender Implicit Association Tests (IAT), and Self-Esteem Implicit Association Tests (IAT) using Pearson's r.

Measure		1	2	3	4	5	6	7	8	9
1. SAQ Total Score	*r*	--	-0.190	-0.240	-0.023	-0.204	0.066	0.032	-.486	-.363
	n		29	29	29	29	17	24	8	8
2. MHI-21 Total Score	*r*		--	.886**	.776**	.923**	-0.212	0.312	-0.334	-0.048
	n			37	37	37	21	29	9	9
3. Psychological Distress (MHI-21)	*r*			--	.410*	.830**	-0.162	0.282	-0.310	0.084
	n				37	37	21	29	9	9
4. Emotional Wellbeing (MHI-21)	*r*				--	.622**	-0.219	0.208	-0.298	-0.289
	n					37	21	29	9	9
5. Hopelessness (MHI-21)	*r*					--	-0.218	0.312	-0.286	0.112
	n						21	29	9	9
6. Gender Affective IAT	*r*						--	-.841**	-0.285	-0.037
	n							19	9	9
7. Gender Competence IAT	*r*							--	0.003	-0.275
	n								9	9
8. Self-Esteem Affective IAT	*r*								--	0.271
	n									9
9. Self-Esteem Evaluative IAT	*r*									--
	n									

*p>.05
**p>.001

Table 3. Table of correlations.

Conclusions

- All IATs showed significant bias, but not in the expected way.
- On average, both men and women were biased toward women and against men, but women were more biased toward women.
- The correlations were mostly not significant and did not align with hypotheses.
- Small sample size, age, and education level may have had an impact on the data.

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Introduction

Gender stereotypes have an effect on our daily interactions. During childhood, we learn about the construct of society and our part within it. We develop a constellation of traits for gender that helps us categorize ourselves and others. This constellation is an implicit stereotype which in itself is neutral of judgement; however, discriminatory biases can be based on implicit stereotypes causing implicit bias. While children are developing these schemata, they are also forming self-concept and self-esteem. Trait self-esteem is formed in childhood and remains stable throughout the individual's life. This type of self-esteem is implicit, meaning not within awareness, and does not fluctuate as explicit self-esteem might due to daily occurrences.

System Justification is where people internalize and perpetuate systemic forms of inequality. Within this, social groups can possess out-group or in-group bias. For example, a socially disadvantaged group may favor the higher status, advantaged group, thereby displaying out-group bias. The socially disadvantaged group examined in this study are women, and the higher status, advantaged group are men. Previous research has found a connection between out-group bias and acceptance of stereotypes concerning one's own disadvantaged group (Jost, Pelham, & Carvallo, 2002).

Research has demonstrated that the experience of gender bias in a girl's childhood has correlated with poor mental health in adulthood. Knowing that the development of gender stereotypes and the internalization of implicit gender bias occurs within the same time frame as the development of implicit self-esteem, the current study aimed to evaluate the relationship between a woman's self-concept that includes implicit negative stereotypes about women, and implicit self-esteem. The objective was to look at the relationship between implicit self-esteem, internalized negative stereotypes, and mental health.

It was hypothesized that women who have low implicit self-esteem, and whose self-concept includes implicit negative stereotypes about women will also exhibit poor mental health.

Method

Data was collected using a computer-based survey in Qualtrics, given to approximately 40 participants. Participants were recruited from a subject pool of psychology undergraduate students at Indiana University Southeast, and from social media.

Participants completed a demographics survey, followed by the Self-Attributes Questionnaire (SAQ), Mental Health Inventory (MHI-21), and gender Implicit Association Test. Demographic information gathered was used to develop a personalized self-esteem IAT. The personalized IAT was emailed to each participant. Code available for free from iatgen was used to generate the IATs for this study. The demographics collected

included standard information such as gender identity, age, and ethnicity. More personal information such as address, handedness, birth date, and religious identity was collected for the generation of the self-esteem IAT in order to replicate that of Greenwald and Farnham (2000).

Figure 1 shows examples of the screens seen by participants when engaged with the gender affective IAT. The participant must sort each word in the center of the screen either to the left or right. The first slide is gender (male or female), the second slide is affect (positive or negative), and the third is a combination of the two. Figure 2 shows examples of the screens seen by participants when engaged with the self-esteem evaluative IAT. The participant must sort each word in the center of the screen either to the left or right. The first slide is identity (self or other), the second slide is evaluative (positive or negative), and the third is a combination of the two.

The gender IAT uses the 20 most common names given to boys and girls born in 1996 (as reported by the Social Security Administration) to represent gender. The SAQ measures self-conception and uses five matrix table type questions to have the participant compare themselves to others on attributes such as intellectual capability, emotional stability, physical attractiveness, and leadership ability. During the gender and self-esteem IATs, participants were asked to make quick judgments about terms, personal information specific to themselves, or gender-typical names. The speed of their responses was used to calculate their IAT scores.

Results

A one-sample t-test was used to determine if the mean d-scores of each IAT were significantly different than zero. All four of the IATs had significant bias, as you can see in Table 1. Both gender IATs had significant bias toward women and against men. The Affective Gender IAT had a significant bias toward target B, which in this case was female. The Gender Competence IAT had a significant bias toward target A, which in this case was also female. The Affective Self-Esteem IAT had a significant bias toward target A, which was the self. The Evaluative Self-Esteem IAT also had a significant bias toward target A, which was the self.

Correlations using Pearson's *r* were run between SAQ scores, MHI-21 scores, gender IAT scores, and self-esteem IAT scores to see if there were any significant relationships between implicit self-esteem, implicit gender bias, and mental health, viewable in Table 2. There was a strong significant negative correlation between both gender IATs, since target A and target B were swapped between the two. In the first gender IAT, target A was male and target B was female. In the second gender IAT, target A was female and target B was male. Both IATs were biased toward women, and since the gender order was swapped, their correlation was negative. There were no other significant correlation relationships between the main variables.

An independent samples t-test was used to see if there was any significant difference between women and men's responses to any of the items, viewable in Table 3. There was a significant gender difference between men and women respondents on the Affective Gender IAT. Men had a lower preference toward women, but were still biased toward women. Women had a stronger bias toward women.

Conclusions

It was hypothesized that women who have low implicit self-esteem, and whose self-concept includes implicit negative stereotypes about women will also exhibit poor mental health. The data did not support this as female participants were reported as having high implicit self-esteem. The data from both gender bias IATs showed that female and male participants both displayed a bias in favor of women, meaning neither group held negative stereotypes about women. Women had a stronger bias toward women than men, perhaps suggesting in-group favoritism. Some limitations that may have caused this samples trend is the small number of participants, age, and education level. Most of the participants were women in their early twenties attending college, and the majority of the sample was college-educated. It is recommended that future studies of implicit gender bias have a sample that includes a larger variety of individuals, ages, and education levels.

No significant relationship was found between implicit gender bias, implicit self-esteem, and mental health. A limitation is the small sample size of the self-esteem IATs as compared to the larger sample size of the other measures. Since the self-esteem IATs were administered at a later time than the initial survey given to participants, there was understandably a higher dropout rate of participation.

It was hypothesized that women may be reported as having lower self-esteem than men. There was no significant difference between implicit self-esteem in male or female participants. It is unclear if the sample is representative of the population in these findings.

The SAQ and self-esteem IAT were expected to measure implicit self-esteem, but the two shared no significant correlation. This suggests the two may not be measuring the same variable. It is suggested that perhaps the SAQ is measuring a version of self-esteem that is not implicit. Researchers such as DeHart, Pelham, and Tennen (2006) have discussed implicit and explicit self-esteem as two different variables that do not correlate with one another, which explains the findings.